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NOTES ON THE TYPES OF SOME AMERICAN SPIDERS IN EUROPEAN COLLECTIONS.

BY NATHAN BANKS.

During a recent trip in Europe, the author had the opportunity to examine the types of a number of our spiders that are in European collections. A considerable number of these, especially those described by Count Keyserling, have been figured, and of these figures are given of only a few, as in most cases we know his species, and the types of most of his Theridiidæ, described from the United States, are in the Marx collection in the U. S. National Museum. Figures are given of most of the other types that I was able to find, but in some cases where the species is already well known to American authors, I have not given figures.

Few synonyms result from the examination, as in most cases the unknown forms were from the western or southern part of the country.

The Koch material is dry and on pins; the colors of the Attidæ are in most cases well preserved, but the structural characters of palpi and vulva can rarely be seen, unless the specimen could be relaxed. However, most of these are readily recognized, as they come from Pennsylvania, the spiders of which are familiar to Eastern collectors. I have given the notes as they were made, rather than try to interpret, thus giving others the same chance in using them.

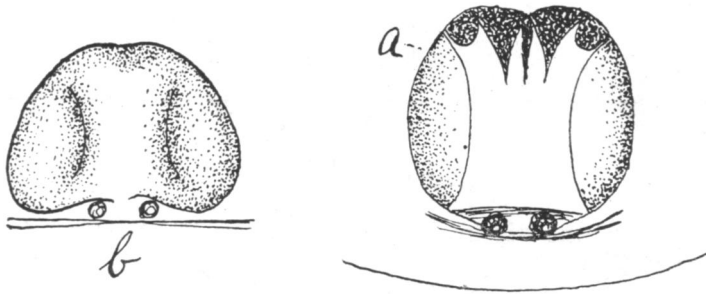
SPECIES OF KEYSERLING.

***Xysticus discursans* Keys.**

A small male; the sides of the cephalothorax evenly dark, a large spot behind (barely divided) a median mark, and in front brownish, with a white band through the eye-region; femur, patella, and tibia of legs I and II evenly dark brown, tibia III and IV more maculate. Abdomen very dark, the three bands going across, leaving only narrow white marks.

***Xysticus limbatus* Keys.**

Two females from Texas labelled type; one (fig. a) has legs pale, and a lyre-shaped pale mark on the cephalothorax; the other (fig. b), with more shrunken abdomen, is much darker, and the legs more mottled.

*Xysticus limbatus* Keys.

Xysticus punctatus Keys. Pl. XI, fig. 9.

A male in Keyserling's collection labelled *X. striatus* type, is, I suppose, this species, as it agrees with his description and is from Georgia; the markings in the middle are hardly as heavy as those on the sides; it may be the male of *X. variabilis*.

Xysticus 4-lineatus Keys.

This has been correctly identified.

Xysticus gulosus Keys.

American identifications are correct.

Xysticus emertoni Keys. Fig. 11.

Female from Georgia; a large reddish species, the sides of cephalothorax with sinuate pale lines.

Xysticus benefactor Keys. Fig. 18.

Resembles *X. stomachosus*; the cephalothorax with four brown spots behind; dorsum of abdomen brown, with a broad pale mark, indented three times on each side.

Xysticus hamatus Keys. Fig. 7.

A male from Kentucky, with very distinct abdominal pattern.

Xysticus lenis Keys.

Immature female. A lichen-gray-brown species, much mottled especially on legs; base of patellæ above with two parallel black marks; five black spots on the cephalothorax.

Xysticus stomachosus Keys.

Four females, as we have identified it.

Xysticus locuples Keys. Fig. 10.

A large red-brown species; sides rather evenly red-brown; legs pale; the male has very long legs, very dark, the cephalothorax with four dark spots and an elongate median spot, the legs lined above with pale.

Xysticus variabilis Keys. Fig. 6.

One female, a small species, which resembles a young *stomachosus*.

Synema nigromaculata Keys.

This is our *S. parvula*; the apical dark mark very plain, but not distinct on the venter nor around the spinnerets.

S. parvula of Keyserling's collection has the white band on base of abdomen more distinct, and the dark band at apex goes down on venter and forms a ring around the spinnerets. No difference in structure as far as I can see.

Misumena spinosa Keys. Fig. 2.

Very similar to *M. asperata*.

Misumena georgiana Keys. Fig. 16.

The cephalothorax shows a white X-mark very distinctly; the femora are rather short.

Tmarus griseus Keys.

Is a female lacking one moult of maturity, the femora somewhat marmorate.

Tmarus floridensis Keys.

Appears to be *T. griseus*, a mature female, but legs all pale.

Ebo oblonga Simon. Fig. 4.

Femur II not as long as the abdomen, tibia II as long as femur; cephalothorax white, brown on the sides, but the margins pale. Two females and a male, none quite mature.

Philodromus praelustris Keys. Fig. 1.

The female is immature; the male is figured.

Philodromus marxi Keys. Fig. 17.

The cephalothorax very broad; it is close to *P. ornatus* and perhaps the same; the Wisconsin specimen seems surely *P. ornatus*, but the others are probably an allied species.

Philodromus satullus Keys. Fig. 5.

A small, even gray species; legs III and IV with a dark line along lower outer side on femur, tibia, and patella, most distinct on the latter; similar line, but fainter, on the lower posterior side of leg II.

Philodromus expositus Keys. Fig. 12.

All femora dotted below as in figure; the cephalothorax a uniform grayish-brown; and so probably not *P. signatus* Blackwall.

Linyphia galbea Keys. Plate XII, figs. 28, 31.

Looks like a large *Bathyphantes*, and the vulva is on the same plan.

Pachygnatha furcillata Keys. Fig. 3.

One female. The mandibles show two large teeth on front of groove and two smaller behind the groove, but it appears to be *P. brevis* Emer. (*Xanthostoma* Koch.)

SPECIES OF SIMON.

Glenognatha emertoni Simon. Fig. 22.

The figures will serve to identify this striking species.

Azilia vagepicta Simon. Fig. 14.

The venter has a large yellow spot on the middle, and one near the spinnerets; tibiae I and II with three broad dark bands.

Cicurina robusta Simon. Plate XIII, fig. 32.

Several females, with characteristic vulva.

Cicurina nevadensis Simon. Fig. 44.

One female; pale, with four dark chevrons; a little larger than *C. tersa*. Vulva not deeply colored.

Cicurina tersa Simon. Figs. 45, 48.

Male and females. Abdomen pale, with only a few blackish marks forming incomplete herring-bone marks.

Cicurina atomaria Simon. Fig. 43.

Three females. A very dark species, of medium size; legs brown (not reddish), abdomen and venter with many dark chevrons and streaks, sternum dark.

Cicurina simplex Simon. Fig. 33.

Several females, with a very long vulva.

Cicurina ludovicina Simon. Fig. 33.

Several females, the vulva is very broad.

Cybæus pusillus Simon. Figs. 34, 40.

This is a *Cicurina*, as Simon has recently recognized.

Cybæus morosus Simon. Fig. 37.

A small dark species, several females.

Cybæus reticulatus Simon.

This is an extremely common spider on the west coast up to Alaska, and already well known in this country.

Cœlotes bimucronatus Simon. Fig. 46.

A large, dark species, with the tibia and metatarsi darker than the tarsi. One male.

Cryphæca peckhami Simon. Fig. 36.

Looks like a small, pale *Cicurina*. The P. M. E. their diameter

apart, and closer to the smaller P. S. E. Abdomen pale; very hairy, with a few dark bands on the apical part; much as in some *Cicurinas*.

Tegenaria emertoni Simon. Figs. 39, 41.

Many pale marks on basal part of abdomen, but dark at the tip. Male and female.

Tegenaria nana Simon. Fig. 47.

A small pale species, with markings similar to those of *Cicurina arcuata* on the abdomen. Two females.

Amaurobius pictus Simon. Fig. 24.

As we have identified it, with many marks on the abdomen.

Amaurobius severus Simon. Fig. 27.

The abdomen above has only four pale basal spots.

Amaurobius nevadensis Simon. Fig. 20.

As large as *A. severus*, but the abdomen of the female has no pale marks on the base, but in male there is one each side.

Plectrurus tristis Simon. Fig. 29.

The male palpus is figured.

Physocyclus dugesi Simon. Fig. 25.

One male, the palpus is very complicated.

Megamyrmeleon californicum Simon. Fig. 13.

One immature female, but the same as I have identified from California.

Sergiolus cyaneiventris Simon. Fig. 8.

One female. Cephalothorax and legs all reddish, abdomen blackish, a narrow white band across middle, and just behind it are the two dark impressed lines; all femora with very stout bristles; no dorsal groove.

Castianeira bicalcarata Simon. Figs. 21, 26.

One male. Cephalothorax yellowish-brown; abdomen small, pale; legs slender, yellowish. Mandibles large and stout; sternum as broad as long.

Maypacijs floridanus Simon. Fig. 30.

A slender species like a *Tibellus*, the abdomen spotted beneath, spots on the mandibles, and femora and tibia I dark beneath, spotted in front. Not mature.

Titiotus californicus Simon. Fig. 23.

The head resembles an *Amaurobius*; a very large species, legs

long, with long spines, those under tibia I a little longer than the width of that joint; the abdomen is shrunken.

Sosilaus spiniger Simon. Fig. 19.

A very striking little species; the eyes on black spots.

Sosippus californicus Simon. Fig. 15.

Cephalothorax entirely dark, no pale median stripe, but rather paler toward margins; abdomen pale, with broad dark stripe above, indented on the sides with faint pale marks, and in male with a lateral dark stripe above, so the abdomen appears dark, with two pale longitudinal stripes; venter pale; metatarsi and tarsi I and II very long and with very long hair and long scopulas.

SPECIES OF BECKER.

Agelena hentzi Becker. Fig. 42.

Three specimens, one (a female) mature; a pale, moderate-sized specimen of *A. nævia*.

Singa van Bruysellii Becker.

A male, but palpus is so bent under that I cannot see the structure. The head is prominent, projecting in front; femur I is hairy, with only a few spines, none as long as the width of the joint; this joint is very dark near the tip, darkening gradually from near the base, which is pale. Venter has four white spots, two a little before the spinnerets and surrounded by black, and one each side of the lung-slits, further apart than the other two.

Theridium glaucescens Becker.

Two specimens (females); it is what Keyserling has so identified, and is not uncommon in the Atlantic States.

Lycosa febriculosa Becker.

This is the young of *L. aspersa* or *L. hellus*. The cephalothorax with a narrow median pale line from eye-region. Abdomen with outline of a basal spear-mark, and irregular dark spots behind; venter heavily spotted. Legs pale, not distinctly marked, not very long; sternum dark, with a median pale stripe not reaching to the tip.

Lycosa exalbida Becker.

This has been recorded from the United States, but erroneously; it is from Brazil; it looks much like a half-grown *Arctosa cinerea*. There is a spine at middle above on tibiæ III and IV, but none at the base.

SPECIES OF KOCH.

Corinna tricolor Koch.

One female, A. M. E. closer to A. S. E. than to each other, P. M. E. about three diameters apart, closer to P. S. E. A distinct species.

Corinna amœna Koch.

A female is *ornata* Htz. Cephalothorax reddish, femur I blackish, hind tibia and patella banded.

Corinna cingulata Koch.

Two females are *bivittata* Keys.; two bands on abdomen, hind legs lined, femur I dark on base, rest pale.

Megalostrata venifica Karsch.

One male; a tooth at base of fang, two large teeth on the paturon, outer one curved forward; tibial process of male palpus is about three times as long as broad, as broad at tip as at base, the tip obliquely truncate.

Xysticus luctans Koch.

Not in the Berlin Museum, although there are several species from Carolina, but not labelled, as *stomachosus*, *gulosus*, and *Coriarachne versicolor*.

Agelena pennsylvanica Koch.

Three specimens; are our common *A. naevia*, one is a good-sized, well-marked female, the two others are not mature.

Teratodes depressus Koch.

I did not find in the Berlin collection, but there is no doubt as to what it is from the figure and description.

Pachygnatha tristriata Koch.**P. xanthostoma** Koch.

In the Berlin Museum are four specimens behind a label "Pennsylv. Zimm.," but no species label, these are his *tristriata* according to the description, and are what Emerton has so identified.

Following this is a label "*tristriata*" and "Pennsylv. Zimm."; behind these labels are seven specimens of our *P. brevis*. There are no other American *Pachygnatha* in the collection. The name labels have been put on after Koch's time, the locality labels are original. It is therefore evident that the label "*tristriata*" has been misplaced, and that the seven specimens labelled "*tristriata*" are Koch's *xanthostoma*, since they agree with his description, and that *P. xanthostoma* is *P. brevis*.

Epeira hispida Koch.

Two dry males. Tibia I curved at base, slender; tibia II thickened at end and very spinose, the metatarsus curved at the base. The body and legs with yellowish hair, tibia I dark at base and on middle.

Epeira ravilla Koch.

One dry female, the abdomen shrunken and partly destroyed. Cephalothorax densely long white-haired. Femora I and II black, other joints reddish-brown to yellowish, dark on tips of tibia I; erect spines on femur I not as long as thickness of the joint; femur III shows above a pale line margined with dark; all legs with much white hair. A large species.

Gasteracantha pallida Koch.

Not in the Berlin Museum.

Phidippus carolinus Koch.

A large species, female, densely white-haired. Mandibles green, palpi and clypeus with very long white hair; cephalothorax mostly white-haired; legs not plainly banded, but leg I has black hair at the apex of the tibia, the rest of the fringe is white; hind tibia very plainly black at tip; venter with a narrow, black, median stripe, but elsewhere densely white-haired; above the abdomen is red each side behind, separated by black, and a white spot in front.

Phidippus asinarius Koch.

One female; this is plainly *P. mystaceus* Hentz; the white spots on cephalothorax are plain, the mandibles red-brown, venter all white-haired.

Phidippus testaceus Koch.

Two specimens, one badly rubbed and may not be the same as the other, this latter is probably *P. podagrosus (multiformis)*. Mandibles greenish, clypeus with yellowish hair, tips of patellæ and tibiæ dark; venter with pale median stripe, dark each side of this, and then the outer sides pale.

Phidippus smaragdifer Koch.

Two from New Orleans; are *audax*, not *variegatus*. The label says "*variegatus* Lucas," so all labels were probably written some time after Koch described the species.

Phidippus lunulatus Koch.

A male; the cephalothorax shows a white band coming up on each side; mandibles green; leg I with long black fringe on tibia, long white hair on inner side of patella, and long white hair on bases of

metatarsus and tarsus, rest black-haired; hind legs plainly banded; femur of male palpus white-haired above. It is *Ph. otiosus* Htz.

Phidippus elegans Koch.

A young female; mandibles rather reddish, dorsum of abdomen with a median stripe of greenish scales, and some green scales in front.

It is probably *Ph. multicolor* Htz.

Phidippus purpurifer Koch.

Male and female from "Amer. Sept., Bescke," so quite probably not from the United States. It is not *Ph. audax*. A very large species; purple mandibles, the wrinkles on them not as continuous as in *audax*, palpus with white hair, clypeus snow-white, tibia I jet-black with a black fringe, venter wholly black, dorsum of abdomen marked much like *audax*, but a distinct white basal band.

Phidippus togatus Koch.

A female. Besides the three white spots, there is a white band around the abdomen above, and on the venter a broad black median stripe margined with white; mandibles green above, blue near tips; a hair tuft in front of dorsal eyes, and behind anterior lateral eyes are many rather scattered bristles; white hair on patellæ, and on bases of tibiæ and metatarsi I and II; on the hind legs the basal half of tibia and part of metatarsus are plainly pale, rest black.

Phidippus paludatus Koch.

Red only above, and not reaching eyes; abdomen with a white band at base and four spots behind white, venter dark with two pale median lines; mandibles dark red-brown on the base, paler toward the tip; no hair tufts, but long hairs all over the cephalothorax; clypeus dark. A male, palpus bent under and perhaps not quite adult.

Phidippus regius Koch.

This Cuban species, as I have identified it. Mandibles strongly wrinkled and green; clypeus densely white-haired; legs plainly banded, tarsi I mostly black, metatarsus pale all over; hair tufts in front of dorsal eyes.

Phidippus auctus Koch.

A female. Mandibles faintly green, clypeus with long white hairs, a hair-tuft in front of dorsal eyes, leg I without any long fringes; abdomen with bright red hair above, a basal white band, behind is probably a black stripe, but here the abdomen is broken, sides dark, venter with dark median stripe.

Phidippus electus Koch.

A young, half-grown female. Mandibles scarcely green on the apical part, clypeus white-haired, legs with many short white hairs; abdomen shrunken, some metallic scales behind, with much white on the sides above, venter with a broad black median stripe, and white hairs each side.

Phidippus alchymista Koch.

Male and female, is *Ph. audax* Hentz; is marked in every way like his *concinatus*.

Phidippus concinnatus Koch.

A male, is *Ph. audax*; spots on abdomen are snow-white, white hair on inner side of patella I, tibia I with black fringe below.

Phidippus dubiosus Koch.

One young specimen, is *audax* Hentz.

Phidippus personatus Koch.

Four specimens, all are young *Ph. audax*; the spots on abdomen are yellowish.

Phidippus mundulus Koch.

Three specimens; two are surely *Ph. audax* not mature; the other is much rubbed and has some green metallic scales on abdomen, and perhaps *Ph. multicolor* Htz.

Plexippus rufus Koch.

One specimen, is *Dendryphantes militaris*.

Plexippus bivittatus Koch.

A young, not half-grown specimen of *Phidippus rufus* Hentz.

Plexippus undata Koch.

A male, *Mævia vittata*, which is colored as in the female.

Plexippus albivittatus Koch.

Two young rubbed specimens, appear to be *Dendryphantes militaris*; clypeus white haired, cannot see any marks on the abdomen, which has white scales on it; the mandibles are red-brown.

Eris aurigera Koch.

Four specimens, male, are *Dendryphantes militaris* Hentz.

Euophrys leucophæa Koch.

One male, is *Dendryphantes octavus* Hentz (*æstivalis* Em.).

Euophrys humilis Koch.

One female, not quite mature, is *Dendryphantes militaris* Hentz.

Euophrys amabilis Koch.

A young female, is young of *Phidippus podagrosus* Hentz (*multiformis* Emer.).

Euophrys obfuscata Koch.

A female, is *Habrocestum pulex*.

Mævia aurulenta Koch.

One, is *Tutelina elegans* Hentz.

Mævia annulipes Koch.

One, very small and young; cephalothorax very low and flat; the abdomen so shrunken and wrinkled that one can see no markings, venter all pale; may be young of *Mævia vittata* Hentz.

Mævia pencillata Koch.

Three males in good condition, are *M. niger* Htz. The three tufts on head are very distinct.

Mævia sulphurea Koch.

One, abdomen gone, but appears to be *Wala mitrata* Hentz.

Mævia pallida Koch.

One, also *Wala mitrata* Hentz.

Mævia tibialis Koch.

One, in good condition, our *Admestina* as already so identified.

Mævia lineata Koch.

One male, in good condition, our *Metacyrba*, long known under this name.

Phiale modesta Koch.

One female, nearly all red, a basal yellow band on abdomen, venter pale in the middle, is *Phidippus cardinalis* Htz.

Mævia cristata Koch.

One male from Pennsylvania, in good condition, is *Tutelina elegans* Hentz. The crest each side of head and the fringe on top of tibia I are very distinct.

Marpissa varia Koch.

This is a half-grown specimen of *M. undata* DeGeer; one specimen.

Callithera aulica Koch.

One male and five females, are *Salticus scenicus*.

Janus gibberosus Koch.

Is *Synemosyna formica* Hentz, as already so placed.

Janus alboinectus Koch.

One adult male glued on a point. A very small species, with flat cephalothorax, pars cephalica dark; abdomen dark, with a white cross-band; leg I rather slender, but heavier than the others, a faint dark line above on tibia I, and side of hind patella dark. This is

evidently *Peckhamia scorpiona* Htz., so for our *Myrmarachne* I propose

***Myrmarachne hentzi* n. n.**

Salticus ephippiatus Peck, Emer. ((not Hentz).

Salticus albocinctus Banks (not Koch).

EXPLANATION OF PLATES XI, XII, XIII.

PLATE XI.

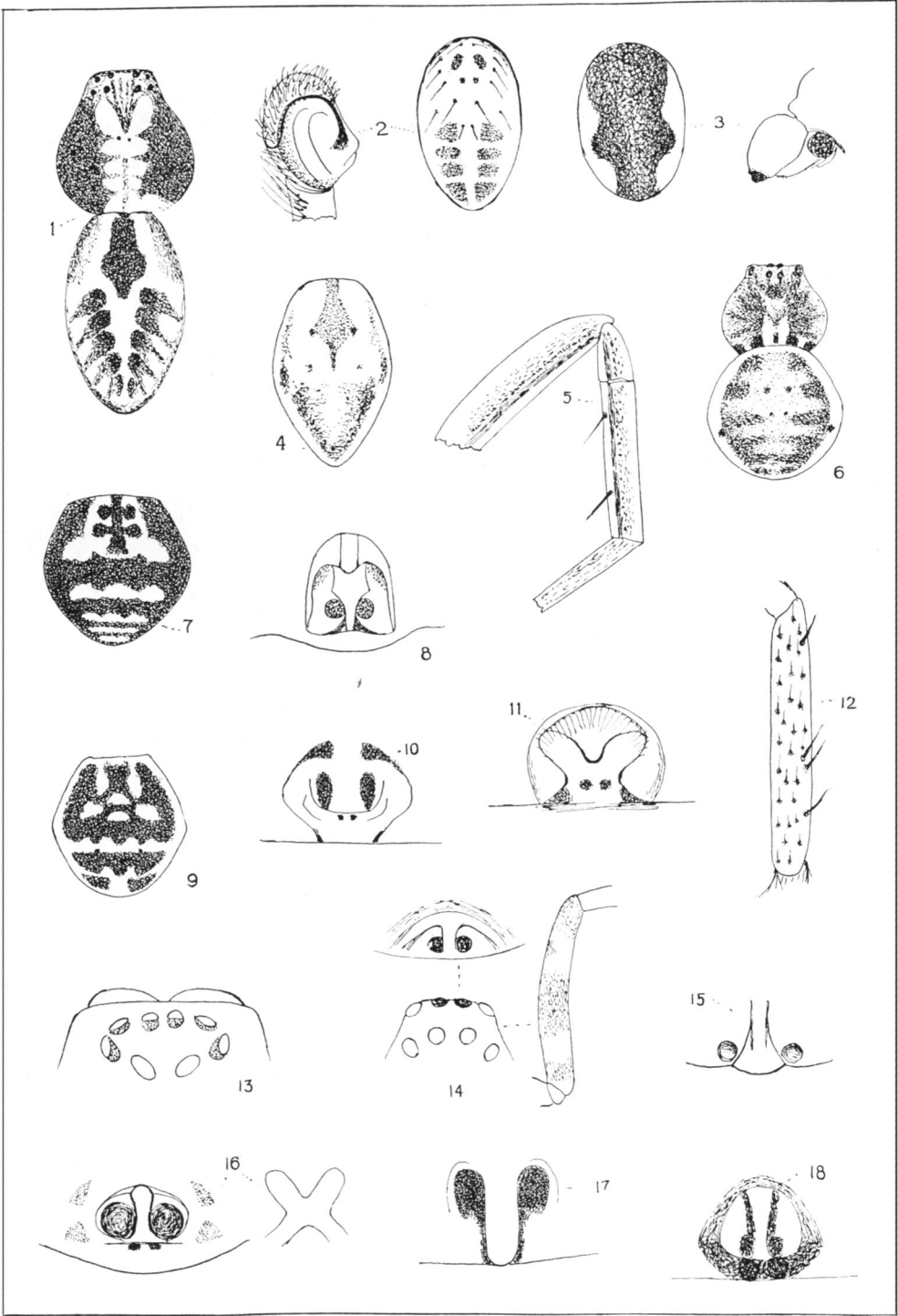
- Fig. 1.—*Philodromus prælustris*.
- Fig. 2.—*Misumena spinosa*, palpus and abdomen.
- Fig. 3.—*Pachygnatha furcillata*, abdomen and mandible.
- Fig. 4.—*Ebo oblonga*, abdomen.
- Fig. 5.—*Philodromus satullus*, leg.
- Fig. 6.—*Xysticus variabilis*, dorsum.
- Fig. 7.—*Xysticus hamatus*, abdomen.
- Fig. 8.—*Sergiolus cyaneiventris*, vulva.
- Fig. 9.—*Xysticus punctatus*, abdomen.
- Fig. 10.—*Xysticus locuples*, vulva.
- Fig. 11.—*Xysticus emertoni*, vulva.
- Fig. 12.—*Philodromus expositus*, femur.
- Fig. 13.—*Megamyrmeleon californicum*, eyes.
- Fig. 14.—*Azilia vagepicta*, eyes, vulva, femur.
- Fig. 15.—*Sosippus californicus*, vulva.
- Fig. 16.—*Misumena georgiana*, vulva, thoracic mark.
- Fig. 17.—*Philodromus marxi*, vulva.
- Fig. 18.—*Xysticus benefactor*, vulva.

PLATE XII.

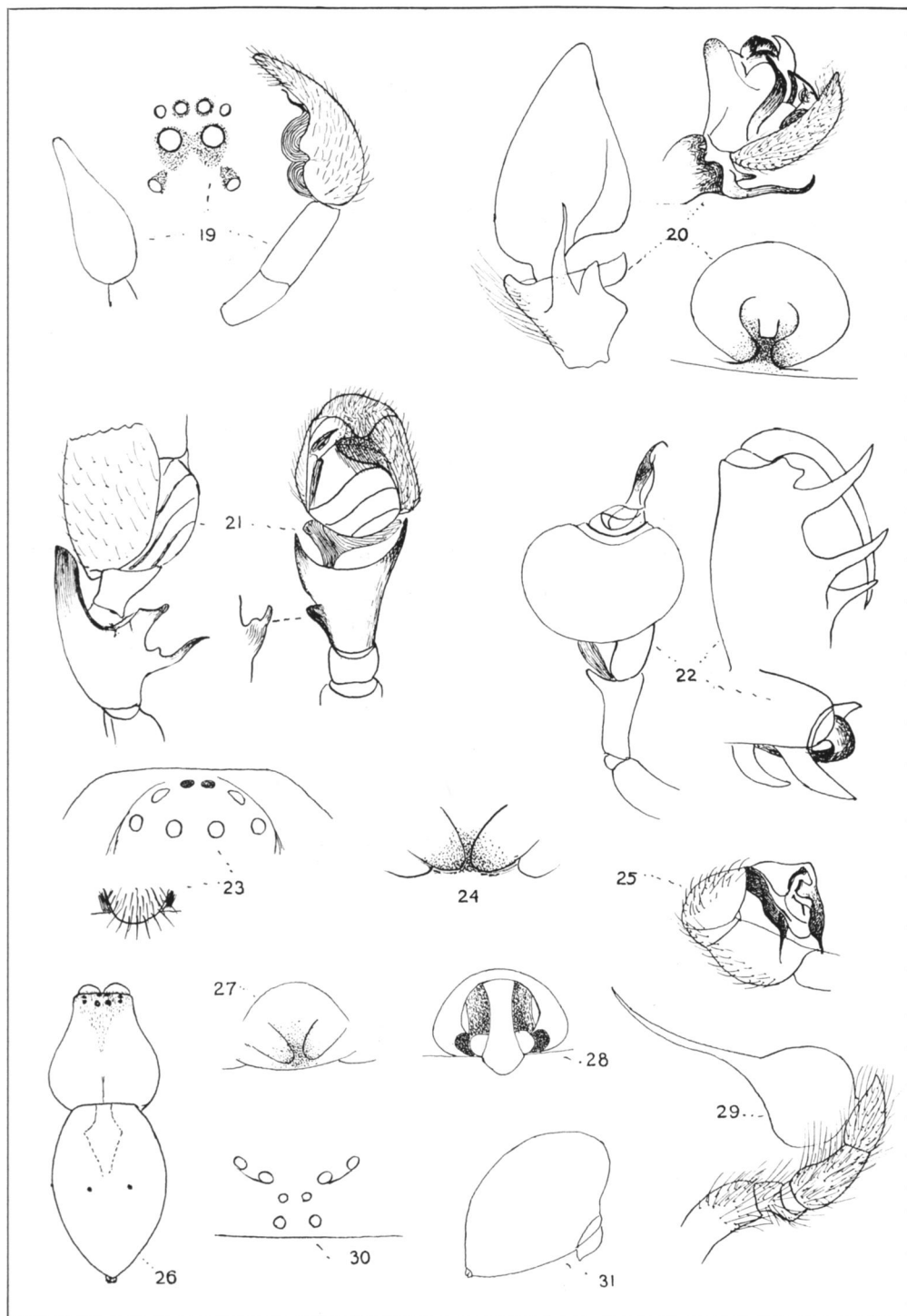
- Fig. 19.—*Sosilaus spiniger*, eyes and palpus.
- Fig. 20.—*Amaurobius nevadensis*, vulva and palpus.
- Fig. 21.—*Castianeira bicalcarata*, palpus.
- Fig. 22.—*Glenognatha emertoni*, palpus, mandible.
- Fig. 23.—*Titiotus californicus*, eyes, vulva.
- Fig. 24.—*Amaurobius pictus*, vulva.
- Fig. 25.—*Physocyclus dugesi*, palpus.
- Fig. 26.—*Castianeira bicalcarata*.
- Fig. 27.—*Amaurobius severus*, vulva.
- Fig. 28.—*Linyphia galbea*, vulva.
- Fig. 29.—*Plectrurus tristis*, palpus.
- Fig. 30.—*Mappacius floridanus*, eyes.
- Fig. 31.—*Linyphia galbea*, abdomen.

PLATE XIII.

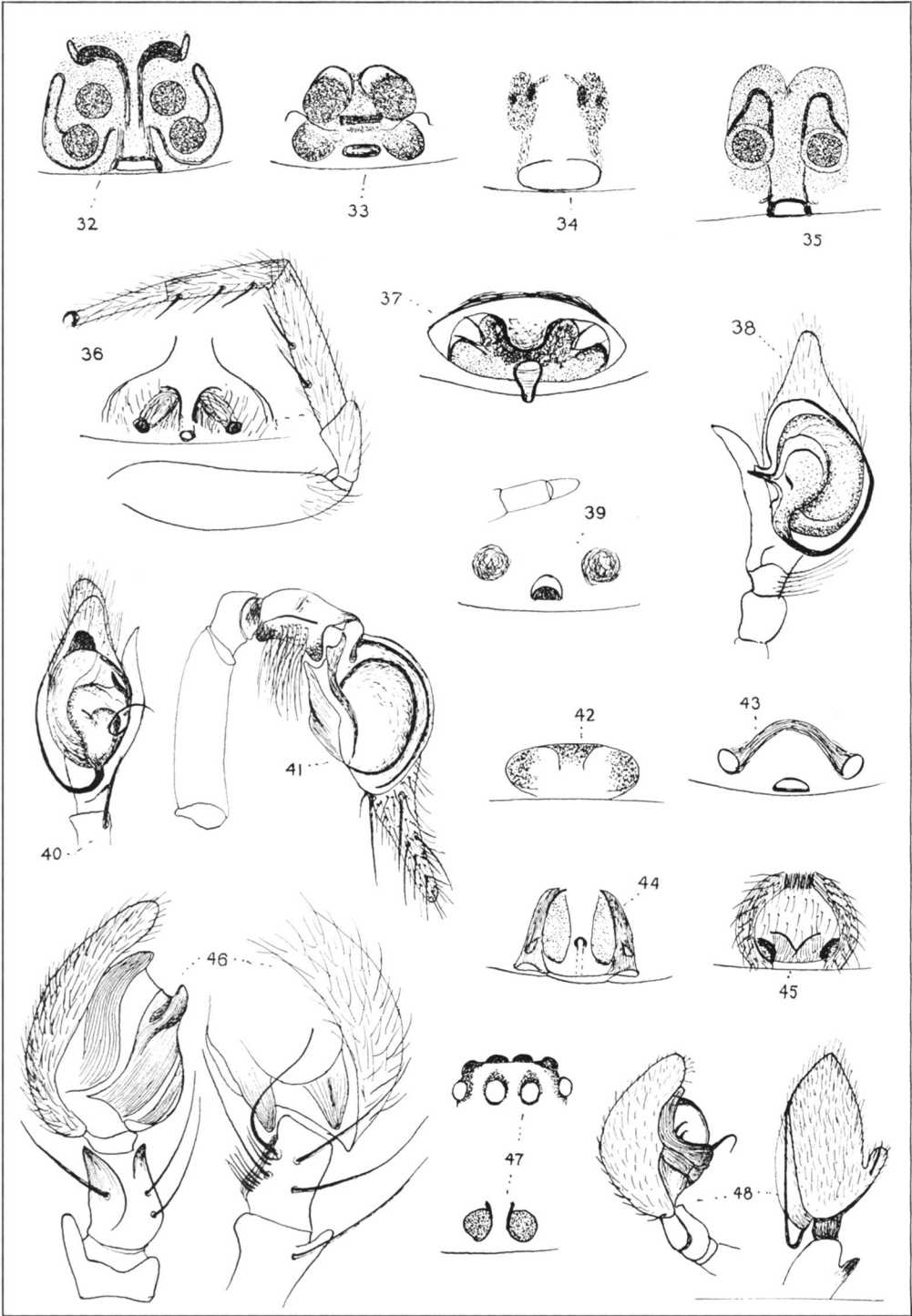
- Fig. 32.—*Cicurina robusta*, vulva.
- Fig. 33.—*Cicurina ludovicina*, vulva.
- Fig. 34.—*Cicurina pusilla*, vulva.
- Fig. 35.—*Cicurina simplex*, vulva.
- Fig. 36.—*Cryphæa peckhami*, vulva, leg.
- Fig. 37.—*Cybæus morosus*, vulva.
- Fig. 38.—*Cicurina simplex*, palpus.
- Fig. 39.—*Tegenaria emertoni*, vulva, spinneret.
- Fig. 40.—*Cicurina pusilla*, palpus.
- Fig. 41.—*Tegenaria emertoni*, palpus.
- Fig. 42.—*Agelena hentzi*, vulva.
- Fig. 43.—*Cicurina atomaria*, vulva.
- Fig. 44.—*Cicurina nevadensis*, vulva.
- Fig. 45.—*Cicurina tersa*, vulva.
- Fig. 46.—*Calotes bimucronatus*, palpus.
- Fig. 47.—*Tegenaria nana*, eyes, vulva.
- Fig. 48.—*Cicurina tersa*, palpus.



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